

### Abstract

A membrane is used in combination with fractionation and hydrodesulfurization to reduce the sulfur content of hydrocarbon feeds, preferably sulfur-containing naphtha feeds. A membrane separation zone is employed to treat a fraction of effluent from a fractionation zone containing sulfur-containing non-aromatic hydrocarbons to produce a sulfur rich permeate and sulfur deficient retentate. The sulfur rich permeate and a second fraction of the fractionation zone, which contains sulfur-containing aromatic hydrocarbons, are further treated in a hydrodesulfurization zone. The stream from the hydrodesulfurization zone and the sulfur deficient retentate from the membrane separation zone are then processed as low sulfur hydrocarbon streams, especially those streams being processed in the manufacture of gasoline when the initial hydrocarbon stream is naphtha from a fluidized catalytic cracking unit.